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Research Library Data Management System Updated

Overview:

The new **ITD Research Library Management System** is an **Access** based data management system. It is menu driven to allow easy access by users who are not familiar with the design or operation of a relational database. All new material acquired by the library is currently being entered into the system. Over time, existing library holdings will be transferred from the old DATAPOINT based library record system. Not only does the new system contain more information about documents contained in the library, it is much quicker to determine if a requested document is available.

A copy of the **Library Tracking System** was obtained from the Colorado DOT. While it provided an excellent starting point, a number of changes have been made to it in order to address our specific needs. They can be classified as additional data fields, buttons or features.

Additional fields that were added to the **Publications Table** include *report date*, *number of pages*, *periodical title*, and *publisher*. The data entry forms for adding new materials and editing existing were redesigned to make them more user-friendly.

Two additional buttons on the **Search Menu**, **Title Search** and **Periodical Search** were added to simplify our response to

requests. Title searches include titles of books; formal reports; articles published in periodicals such as Transportation Research Records, compendiums or magazines; or other miscellaneous publications. Periodical searches address requests for specific periodicals including Transportation Research Records, Transportation Research Circulars, conference proceedings and magazines.

An additional feature added was the **Status Bar Text** for each of the forms to provide *on-screen* instructions to the person updating the database. A complete **User's Manual** is also being written to ensure consistency in the way data is entered as personnel shifts occur. This has been a problem in the past.

Access:

At the current time, the new **Library Data Management System** can be accessed by contacting Stephen Loop, Lab Research Engineer (334-8267 or sloop@itd.state.id.us) or Jane Wilson at the Materials Section Front Desk (334-8440 or jwilson@itd.state.id.us). They will be able to conduct a search of library holdings. All material that is removed from the library must be checked out. If the standard two-week check out period is insufficient, special arrangements can be made for an

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FY2000 Research Projects Selected

Focus of Research:

While research projects can cover a wide range of transportation disciplines; highway related projects are expected to address either directly or indirectly the four **Primary Focus Areas** presented in the **Highway Performance Report**. These include:

- K Pavement Condition,
- K Bridge Condition,
- K Highway Congestion, and
- K Highway Safety.

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BSU and U of I Cooperate in the Transportation Research Arena

While they may battle each year on the football field, Boise State University and the University of Idaho have found that working together makes good sense!

Since 1994, the two universities have participated in the evaluation of ITD's storm warning system, now being tested on I-84 near Shoshone in southeastern Idaho. The project involves testing new roadway and visibility sensors so that motorists as well as ITD staff have access to the latest roadway conditions and weather information. New variable message signs were also

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RESEARCH ADVISORY COMMITTEE

Bob Smith, Materials - *Chairman***Greg Laragan**, Design - *Vice Chairman***Clayton Sullivan**, Asst. Chief Engineer-Operations**Steve Hutchinson**, Asst. Chief Engineer-Engineering**Matt Farrar**, Bridge**Dave Jones**, Maintenance**Larry Van Over**, Traffic**Charlie Rountree**, Planning**Dennis Clark**, Environmental**Larry Falkner**, Public Transportation (Rotating)**Loren Thomas**, District 3 Engineer (Rotating)**Ed Bala**, District 5 Engineer (Rotating)**Scott Frey**, FHWA (Ex Officio)**Stephen Loop**, Materials (Ex Officio)

Transportation Research Information System (TRIS) Access Now Open to All

[TRIS Online](http://tris.amti.com/search.cfm), the largest and most comprehensive source of information on published transportation research on the Web, is now available through the National Transportation Library's Web site at <http://tris.amti.com/search.cfm>. It currently contains over 400,000 records of published transportation research including material indexed and abstracted by TRB as well as the material entered by the Transportation Libraries at the Univ. of California at Berkeley and Northwestern University

[TRIS Online](http://tris.amti.com/search.cfm) not only provides access to the bibliographic records and abstracts found in TRIS but it will include links to the full text of public-domain documents or document suppliers. Currently there are almost 200 links to full text documents and over 50,000 links to the Web sites of corporate authors.*

LIBRARY (Cont. from Page I, Col. 2)

an extended period. The new system allows a record to be maintained on library customers and allows the tracking of documents that have been checked out.

Operations:

The ITD Research Library Management System opens to the **Main Menu**, which is divided into two areas, **Materials Menu**, and **Customers Menu**.

By clicking on the buttons on the **Main Menu**, a series of sub-menus can be selected to perform all tasks necessary to add new materials, edit materials or delete materials from the system; search for

materials; check out materials; and also add, edit or delete customer records. The system allows a user to *search* for a document by six different criteria: title, report number, author, keyword, periodical title, or location.



Publication Searches

From the customer perspective, the most apparent improvement over the previous Library Database will be the enhanced search capabilities. Depending on the needs of the customer, searches will be possible based on the document **Title**, **Report #**, **Author**, **Keywords**, **Periodical Title** or **Location**. Documents are located in the library based on such categories as TRB, Federal, AASHTO, Trade Associations, States, etc.



Data Entry

Both the **Add New Materials** form and the **Edit Materials** Form are divided into three areas. The First Area applies to all types of documents and includes the following fields: **Title**, **Author(s)**, **Performing Agency**, **Keywords**, **Number of Pages**, **Copies**, **Date Published**, **Publisher**, **Date Received**, and **Location**.



The Second Area applies only to reports. Examples of such reports include: technical reports published by the various states, the FHWA and other federal agencies; NCHRP reports and syntheses; reports published by associations or industries; and other miscellaneous documents which carries a formal report number. These reports generally will include a **Sponsoring Agency**, which may be different than **the Performing Agency** as well as a **Report Number** and **Report Date**.

The Third Area includes the **Periodical Title** field and applies only to documents that contain individual articles. Examples of periodicals include magazines published by professional or trade associations, Transportation Research Records, Transportation Research Bulletins and Transportation Research Circulars.

When entering data, whether one is adding or editing records for either materials or customers, one has the option of working directly with the **Publications** table or **Customer** table rather than using the entry forms. This feature is particularly useful when one is entering several records where one or more fields are duplicated.

Future Plans

It is anticipated that for the next year, searches of the Research Library holdings will continue to be made by contacting either Jane or Steve. They will be able to search both the old system and the new system to locate materials. As the older materials are transferred to the new database, the DATAPOINT system will be phased out.

Once a sufficient portion of the library holdings has been added to the new database, access to the database will be provided to all Department personnel via the Intranet. This will allow personnel to conduct their own searches and then place an order for documents via e-mail. Documents requested from the Research Library will be sent via Intradepartmental mail the same day the e-mail request is received.*



BSU & U of I (Cont. from Page I, Col. 2)

installed at four locations last winter, so that motorists are informed when visibility is low or there is ice or snow on the roadway. ITD district maintenance staffs use the road and weather information to deploy maintenance crews quickly and efficiently as soon as they are needed.

Co-investigators Patrick Shannon, BSU, and Michael Kyte, NIATT at UI, have produced reports for the past several years, evaluating the reliability of the system and the quality of the data that it has produced. Shannon, a professor of business specializing in statistical analysis, notes that, "The working relationship



Michael Kyte

between Boise State University and the University of Idaho has been very enjoyable. Mike and I have



Pat Shannon

brought complementary skills to this project. We've become a very effective team, and also developed a friendship that will extend beyond the time frame of this research. It is my hope that we can work on future projects together."

Beginning this year, the two universities will participate in the design and implementation of the Treasure Valley's new freeway and arterial traffic

management system. Conducted in cooperation with ITD and the Ada County Highway District, the universities will work together to test the signal timing strategies needed when freeway congestion is high or when the freeway is closed by an accident. They will also test freeway incident detection systems and develop training for professionals and university students in the use of traffic management techniques.

Mandar Khanal, professor of civil engineering at BSU and co-investigator on this project, notes that "When working on applied research



Mandar Khanal

problems, it makes sense to pool all available resources in the solution of the problem. When I am presented with a problem that will benefit from collaboration with researchers at other universities in the State, my first thought is about how the collaboration will help in tackling the problem at hand. The institutional affiliation of individuals never crosses my mind. If there are like-minded individuals at other institutions in the State, I have no second thoughts about approaching them for collaboration. In this particular instance, I found professors at UI's NIATT who have significant experience and expertise in this field and it made sense to collaborate with them. I am happy that they think similarly."

Zaher Khatib, co-investigator on the project with Khanal notes, "This project will be important to the bigger picture of applying new technology to our roadways. In addition, I'm looking forward to the collaboration with BSU. Rather than all of us working individually, it just makes sense to draw on the expertise that is available in this state. This way, we can provide the best possible outcome for our customers, the citizens of Idaho"*



Zaher Khatib

RESEARCH PROJECTS (Cont. from Page I, Col. 1)**The Chosen:**

Project ID	Project Name	Technical Contact	Score (0-5)
PRP2000-05	Vegetation Management Practices and Training for Soil Stability, Erosion Control, and Slope Maintenance	Gene Ross, Maint.	4.7
PRP2000-14	Evaluation of Treatment Methods for Swelling Soils	Keith Nottingham, Dist. 3	4.2
PRP2000-07	Modification of PONTIS Bridge Management Software for ITD	Kathleen Slinger, Bridge	4.0
PRP2000-04	Idaho Statewide Trip Generation Rates and Friction Factors	Gary Sanderson, Planning	3.8
PRP2000-08	Investigation into the Causes of Concrete Bridge Deck Cracking	Matt Farrar, Bridge	3.8
PRP2000-09	Earthwork Optimization and Training in Road Design	Greg Laragan, Design	3.8
PRP2000-06	Freeway Incident Detection and Arterial Systems Management for the I-84 Corridor	Larry VanOver, Traffic	3.7

The Process:

Beginning with the FY2000 Program, a two-stage review process for research proposals has been adopted. This allows the Department's Research Advisory Committee (RAC) to initially address the relative importance of the research proposals, focusing on:

- ✓ General problem and need
- ✓ Specific objectives and/or goals
- ✓ Applicable research in progress or related research

RAC members previewed the **Problem Statements**, which had been received from Department staff members and also from Boise State University and the University of Idaho. At the first stage meeting, the RAC met in private to discuss the proposals and select those for further consideration.

First stage statements that were approved were returned to the respective submitters for development of a more detailed **Scope of Work and Budget** (second stage problem statement). In most cases, university or consultant staff

developed the Scope of Work and Budget for those projects that were suitable for contract research, with the assistance of an ITD Technical Oversight Committee. For those projects in which ITD personnel will perform the research, the principal investigator developed the scope of work and budget with the assistance of the Technical Oversight Committee.

During the second stage meeting of the RAC, the project sponsors made presentations to the Committee. Following the presentations and subsequent questions from the Committee members, projects that had made the short list were ranked. Based on the funds available, projects were selected for inclusion into the FY2000 Research Program based on their relative ranking.

First Stage Review:

Each of the fifteen (15) proposed projects was discussed by the RAC members and measured against the following four criteria:

- 1) Did the proposed project meet the definition of research?
- 2) Did the project address a Department need?
- 3) Had the problem been addressed previously, either internally or by some other agency?
- 4) Was the project the subject of current research at the regional or national level?

Brief descriptions of each of the submitted projects follow along with a summary of the consensus opinion of the Committee members.

PRP2000-01 - Research and Develop a MACS "Roadway Name" Table. The objective of the project is to research, verify and populate a MACS "Roadway Name" table with proper street names, types, address ranges and aliases compatible with the National Emergency Number Association (NENA). Since this table would follow ITD's location referencing standard by using the MACS Key, it would enable and facilitate the accurate and reliable identification of any planning corridor, traffic analysis zone, accident/collision, etc. on any public road in Idaho. It would also facilitate the integration of all other roadway data. From this "Roadway Name" table, ITD would be able to produce an "Intersection Milepoint Log" organized by roadway name much like the current State and Federal Aid Mile Point Logs.

Recommended for Stage 2 Evaluation. This project proposes a new technique involving Census Bureau "Tiger" files to build the table.

PRP2000-02 - Seal Coat Applicability. The goal of this research project would be to address the issues that impact the choice of which class of cover coat material should be use.

These include: 1) longevity of the Class IV chip vs. other classes of chip, 2) tort claims for damage resulting from Class IV vs. other classes of chip, 3) cost difference of production and application of the different classes of chips, and 4) the benefits derived from the use of fog coats at various application rates. The expected benefits of this project would be better information and policy to determine the best seal coat oil, cover coat type, and possible use of a fog coat to ensure that the design life of the seal coat is achieved.

Not Recommended. AASHTO is producing a report.

PRP2000-03 - Source Management Database. The intent of this project is to develop a computer database, either district wide or statewide, to keep track of items related to gravel sources. It would provide a stable and easily accessible platform for the storage and acquisition of data pertinent to the source. In addition, the database could be set up so that the information would be available to contractors.

Not Recommended. This issue is currently being addressed. The database needs to be integrated with the Property Management System. This is an operational issue, not research.

PRP2000-04 - Idaho Statewide Trip Generation Rates and Friction Factors. The purpose of this proposed project is to make sure that data collected from the statewide travel survey will satisfy the needs of the Idaho statewide traffic demand model currently under development. An Idaho statewide model should reflect the demographic and socioeconomic characteristics of travelers in the state and their travel habits. The lack of Idaho-based, statewide, up-to-date survey data has been a constant problem for the research team at the University of Idaho in developing the model. As survey data are made available, the UI research team would check the data for validity and produce trip generation rates and friction factors to ensure their applicability.

Recommended for Stage 2 Evaluation. This project relates to the Statewide Planning Model project. The proposed study is crucial to building a reliable statewide traffic demand model and model calibration.

PRP2000-05 - Vegetation Management Practices and Training for Soil Stability, Erosion Control, and Slope Maintenance. The objectives of this project are to investigate revegetation techniques for erosion control, sediment reduction and slope stability and to provide training for Idaho Transportation Department personnel responsible for design, construction, maintenance and environment. The objectives would be accomplished through the following three tasks: 1) location and development of research design for roadside revegetation study sites, 2) facilitation of statewide workshops for training and information exchange for slope maintenance and revegetation projects, and 3) revisions to the roadside revegetation guidebook.

Recommended for Stage 2 Evaluation. This project is the continuation of an ongoing study.

PRP2000-06 - Freeway Incident Detection and Arterial Systems Management for the I-84 Corridor. The purpose of this project is to enhance and build upon the work that will be completed as part of the Treasure Valley ITS integration project to accomplish some additional, and important, objectives. These include: 1) testing and evaluation of standard incident detection algorithms that are used in practice today and help to determine which ones may be suitable for use in the I-84 corridor, 2) development and testing of signal control strategies for actuated coordinated traffic control systems in the I-84 corridor, and 3) development of a set of materials that can be used to train practicing professionals and university engineering students to operate a freeway traffic management center.

Recommended for Stage 2 Evaluation. Questions were raised on whether this project was redundant and how it would mesh with the current ACHD project. It was determined that it was tightly tied to the ACHD project. The hardware is provided from other funds and this project will develop the software necessary for that hardware.

PRP2000-07 - Modification of PONTIS Bridge Management Software for ITD. Researchers at the University of Idaho propose to help the bridge section at ITD prepare information for the cost database for PONTIS. This work would involve the review of ITD cost databases, estimation of materials and quantities used on specific bridge projects, and a comparison of costs between similar bridge designs. Developed in 1989 for the FHWA, PONTIS is currently used by over 40 state Departments of Transportation and other agencies. However, the database provided with PONTIS is based on information for California bridges. The database must incorporate Idaho costs in order for the model to make predictions for Idaho.

Recommended for Stage 2 Evaluation. This project would modify the available software to make it more applicable to Idaho conditions. Once the project was complete, the required maintenance of the model would be carried out with operating funds.

PRP2000-08 - Investigation into the Causes of Concrete Bridge Deck Cracking. This project would address the increase in cracking in concrete bridge decks experienced by ITD. This increase has occurred in concrete bridge decks using designs that historically produced satisfactory performance. The cracking has occurred both in new decks and in decks that have been subjected to traffic for various periods of time. Bridge deck cracks are usually caused by the following factors: plastic shrinkage due to high evaporation, differential expansion and contraction due to temperature changes, concrete curing shrinkage, and bending from traffic

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RESEARCH PROJECTS (Cont. from Page V, Col. 2)

loads. Based upon the apparent success of designs that date back many years, these items were thought to have been adequately addressed.

Recommended for Stage 2 Evaluation. This proposal would need to be revised to more directly address the Department's needs. The estimated project costs are believed to be high with respect to what the staff envisions for the scope of the project.

PRP2000-09 - Earthwork Optimization and Training in Road Design. The current version of ROADZ is DOS-based and works independently as a stand-alone program. Under the proposed project, ROADZ would be converted into a Windows-based program. Also, a means of automating the input of design data into ROADZ would also be explored and, if possible, implemented in the revised version of the program. This automation would be based on the Engineering and Survey Exchange (EAS-E) data format. The EAS-E format would allow exchange of information to ROADZ from vendor software in the form of ASCII text files. Use of this format would not only allow information exchange from InRoads, the design software currently used by ITD, but would also enable information exchange from other major roadway design software should there be a change in the software used by ITD.

Recommended for Stage 2 Evaluation. This is a Phase II project. The results of the Phase I Feasibility Study have been very promising. There is a lot of interest among the designers.

PRP2000-10 - Development of Test Method for Depth Verification of Plantmix Pavement by Probe. The objective of this project is to develop a test method to verify the depth of the plantmix pavement behind the paving machine with a probe-measuring device. The advantage of measuring the depth during placement is to preserve the option of adjusting the paver to correct any deficient pavement depth.

Recommended for Stage 2 Evaluation. This is a low cost project and was considered worth pursuing. There was a question on how the project would be accomplished.

PRP2000-11 - Modification of Microstation Bridge Reinforcement Detailing Sheet. Contract plans for bridges have a sheet detailing the reinforcement used in the structure. This sheet is prepared using Intergraph Microstation software. The detailing process is very time consuming and a manual summary table must be calculated. The sheet has been reformatted using a standard list of bend types and an Excel spreadsheet program has been written that lists all the data for each bar mark and calculates the summary tables. If the spreadsheet could be imported into the Microstation sheet, the detailing time would be greatly reduced and math errors could be eliminated in the summary table.

Recommended for Stage 2 Evaluation. The details of this project need to be further refined. It was reported that Washington DOT had done a similar project based on the Lotus 1-2-3 platform. Contact needs to be made with Washington prior to finalizing this proposal.

PRP2000-12 - Geogrids in Pavement Ballast Sections. No design method exists for determining ballast section reduction when using a geogrid. Field experience has shown that geogrids can define ballast materials and distribute loads over a wider area, thus producing lower bearing pressures. The objective of this project is to determine the optimal geogrid placement within the ballast section and determine the ballast reduction possible when using a geogrid. The final report should include a design procedure for determining the ballast reduction.

Not Recommended. Montana is conducting a study of this subject. There might be a possibility of partnering with Montana.

PRP2000-13 - Right of Way Proximity Damage Study. The objective of this project is to gather and organize any information that may be available from other state DOT's and other agencies as well as conducting a statewide study. The study should categorize different areas such as city, suburban and rural real estate markets and the effects that highways of varying cross section, traffic volume, etc. have on the impacted properties in the marketplace. The study should quantify varying amounts of damage due to the Department's projects that could be applied by the appraiser in their final analysis of properties. Some data has been gathered from other state DOT's and agencies that can be made available to the researcher.

Recommended for Stage 2 Evaluation. This is a national problem. A literature search is needed prior to finalizing a proposal.

PRP2000-14 - Evaluation of Treatment Methods for Swelling Soils. Clay soils that are highly capable of shrinking, swelling and heaving are predominant throughout the US 95 corridor between M.P. 16 and M.P. 19 resulting in many complaints filed by the trucking industry. The proposed study should identify the causes, location, severity, and moisture changes associated with the soil volume changes. Also, the study should identify treatment methods that are utilized in other states and develop options for U.S. 95. After methods to evaluate volume stability have been identified, test sections should be built utilizing the proposed repair options.

Recommended for Stage 2 Evaluation. This is a safety-related problem. The problem also exists in Colorado, Montana and Texas. A literature search is needed to determine the level of ongoing research before the proposal is finalized.

PRP2000-15 - Gravel Extraction Forecasting Model. It is becoming more difficult to use existing materials sources and

obtain approvals for new sources due to population growth; competing uses; inconsistent land use ordinances and permitting processes; and mitigation requirements for noise, traffic, dust and aesthetics. The objective of this study would be to develop an economic analysis of construction aggregate markets and then develop a long-term forecasting model for aggregate needs in Idaho. This model would predict aggregate needs for construction on a county-by-county basis for the next fifty years. Existing and proposed aggregate sources could be plotted on base maps using GIS data. A similar model was developed for Oregon in 1995

Not Recommended. This project was not considered to fit the definition of research.

Second Stage Review:

Randy Rowell discussed the need for **PRP2000-01 - Research and Develop a MACS "Roadway Name" Table**. The project addresses federal requirements for database structure. It was proposed to use **TIGER** line data from the Census tied to the **MACS** system. A consultant would be utilized. The estimated completion time was three to six months.

Concerns raised included 1) procedure to keep local data up to date, 2) level to which **TIGER** files are available, and 3) what constituted FGDC standards. Randy Rowell addressed each of the committee's concerns.

Jan Hargrave presented **PRP2000-10 - Development of Test Method for Depth Verification of Plantmix Pavement by Probe**. The intent is to replace destructive testing methods. Staff has modified a concrete probe to test the concept. Dave Turner has suggested that interchangeable probes be developed for concrete or asphalt. There is a need to develop a correlation between the compacted and uncompacted thickness of asphalt. There is also a need to develop the test procedure.

In response to questions from the Committee, Jan indicated that district Independent Assurance (IA) personnel would do the field-testing and Jan would do the correlation studies and develop the test procedures. If a correlation can be shown, FHWA has indicated that they would accept the test results in lieu of destructive testing. The correlation would have to be done on a project by project basis on each test strip

Matt Farrar reported that **PRP2000-11 - Modification of Microstation Bridge Reinforcement Detailing Sheet**. Should be put on hold.

Cindy Smith presented **PRP2000-13 - Right of Way Proximity Damage Study**. She stated that appraisals of proximity damage are very subjective and no process has been developed by any of the other states to ensure consistency.

The Committee raised a number of questions. In response, Cindy indicated that the project would last one year and would address all environmental impacts. Limited data has been obtained to date. They were initially looking at developing a synthesis.

Keith Nottingham presented **PRP2000-14 - Evaluation of Treatment Methods for Swelling Soils**. It addresses a localized problem on US 95. The district can't develop a project because it can't be defined. Millions of dollars in maintenance are being wasted in the meantime. During the first year, work would be limited to soil sampling and lab testing. The total duration of the project would be three years. Keith indicated that total research cost over the three years was estimated at \$150,000. The District would fund the test sections.

Mandar presented **PRP2000-09 - Earthwork Optimization and Training in Road Design**. The proposal is built on results from **RP 143 - Evaluation of Potential Earthwork Savings In Road Design Using ROADZ**. In 1966, the USFS tested the Automatic Earthwork Adjusting Program (AEAP) on 11 forest service roads. They obtained savings of 2.5% for excavation and 15% for haul. In 1998, the latest version of the program was tested by **BSU** on three segments of higher standard Idaho State highways. Based on the results, the Design Section wants the optimizing feature of **ROADZ** applied to all possible design projects. As part of the proposed project, **ROADZ's** earthwork optimizing feature would be converted into a Windows-based program and training would be provided to ITD. The conversion of the program, including the resolution of the integration and data exchange problem with the road design software **InRoads**, would be completed first.

Michael Kyte gave an overview of **PRP2000-04 - Idaho Statewide Trip Generation Rates and Friction Factors**. Ruben Manubay discussed the work of the Dept of Commerce and State Police in conducting a travel survey. Gary Sanderson spoke about the use of the data, including how it fits in with the development of a statewide travel model.

Michael next gave an overview of **PRP2000-05 - Vegetation Management Practices and Training for Soil Stability, Erosion Control, and Slope Maintenance**. Gene Ross spoke to the importance of work by both Dr. Kingery on species selection and Dr. Miller on slope stabilization. He has been pleased with the work to date. Gene also discussed the training aspects of this project. In response to several questions Gene indicated that he would be working with Bruce Drews and Garth Newman on incorporating the training into the Department's program and also that the manual being developed under this project would be a new manual, not a revision to the current manual.

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RESEARCH PROJECTS (Cont. from Page VII, Col. 2)

Michael then discussed the relationship of **PRP2000-06 - Freeway Incident Detection and Arterial Systems Management for the I-84 Corridor** to the Department's ITS work. Mandar indicated that the fiber optic feed to the new engineering building traffic lab and the associated hardware is being funded under a federal grant. ITS funding is only available for hardware and could not fund the software development proposed under this project. According to Michael, five sources of funds are now involved in the project

Michael next discussed **PRP2000-07 - Modification of PONTIS Bridge Management Software for ITD**. Kathleen Slinger discussed the need to incorporate Idaho cost data into the software to make the results more applicable to Idaho's bridge program.

Michael closed his presentation with a discussion on **PRP2000-08 - Investigation into the Causes of Concrete Bridge Deck Cracking**. Matt indicated that the Bridge Section has done some work in-house, but has not had sufficient manpower or expertise to instrument and monitor structures. The cost of the project has been cut in half from the original proposal because they plan to apply the project to an actual bridge rather than having the university develop a mix design. They also plan to use results from New Hampshire as a starting point.



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